Pantelimon Stanica

Department of Applied Mathematics
Naval Postgraduate School
833 Dyer Rd.
Monterey, CA 93943

Office: (831) 656-2714
Home: (831) 393-0789
E-mail: *pstanica@nps.edu*,
Web: *www.nps.navy.mil/Faculty/stanica/*

Egotist: a person more interested in himself than in me.
Ambrose Bierce (1842-1914)

1. Education

- *Ph.D. Mathematics,* State University of New York at Buffalo, 1998
  Thesis: **Chromos, Boolean Functions and Avalanche Characteristics**
  Advisor: Professor Thomas W. Cusick, Ph.D.
- *Master of Arts:* Bucharest University, Romania, 1992
  Thesis: **Quadratic Number Fields**, Advisor: Professor Victor Alexandru, Ph.D.
- *Research Interests*: Number Theory, Cryptography, Coding Theory, Combinatorics, Finite Fields, Boolean Functions, Valuation Theory, Class Field Theory, Theoretical Computer Science
- Fluent in English, Romanian; Proficient in French, Italian (and some German)

2. Professional experience

- *Associate Professor* (2006-present), Naval Postgraduate School, Department of Applied Mathematics
- *Distinguished Research Professor* (2004-2007) at Auburn University Montgomery
- *Tenured Associate Professor of Mathematics,* 2003-2006, Auburn University Montgomery, Department of Mathematics
- *Assistant Professor of Mathematics,* 1999-2003, Auburn University Montgomery, Department of Mathematics
- *Associate Researcher,* 1992-present, Institute of Mathematics of Romanian Academy, Bucharest, Romania
- *Co-Director of the Sciences Computer Lab*, November 2000-May 2002
- *Visiting Lecturer,* 1996, 1998-1999, State University of New York at Buffalo
- *Teaching Assistant,* 1993-1996, State University of New York at Buffalo
- *Professor Assistant,* 1992-1993, Bucharest University, Romania

3. Publications in refereed journals

1. **Minimal Niven Numbers** (with H. Fredricksen, E.J. Ionascu, F. Luca), accepted *Acta Arithmetic*a, 2008.
2. **Rotation-Symmetric Functions – Count and Cryptographic Properties** (with S. Maitra), accepted in *Discrete Applied Mathematics*, 2007.
3. **Balanced Symmetric Functions over GF(p)** (with T.W. Cusick, Yuan Li), accepted in *IEEE Transactions on Inform. Theory*, 2007.

4. ***The Independence Number for the Generalized Petersen Graphs*** (with J. Fox, R. Gera), accepted in *Ars Combinatoria*, 2007.

5. ***Galois Groups of Polynomials Arising from Circulant Matrices*** (with M. Filaseta, F. Luca and R. Underwood), *J. Number Theory* 128:1 (2008), 59-70.

6. ***Graph eigenvalues and Walsh spectrum of Boolean functions***, *Integers-Journal of Combinatorial Number Theory* 7(2), Art. 32, 2007.

7. ***On the delta sequence of the Thue-Morse sequence*** (with T.W. Cusick, H. Fredricksen), *Australasian Journal of Combinatorics* 39 (2007), 293-300.

8. ***Resolution of some conjectures related to Erdos-Debrunner inequality*** (with E. Ionascu, C. Frenzen), *J. Ineq. Pure Appl. Math.* 8 (2007), Issue 3, 13pp.

9. ***Two Diophantine Approaches to the Irreducibility of Certain Trinomials*** (M. Filaseta, F. Luca, P. Stanica, R.G. Underwood), *Acta Arithmetica* 128 (2007), 149-156.

10. ***Heron triangles with two fixed sides*** (with E. Ionascu, F. Luca), *J. Number Theory* **126** (2007), 52-67.

11. ***Linear Equations with Euler Totient Function*** (with F. Luca), *Acta Arithmetica* **128** (2007), 135-147.

12. ***Extreme values for the area of rectangles with vertices on concentrical circles*** (with E. Ionascu), *Elemente der Mathematik* 62:1 (2007), 30-39.

13. ***Results on the min-sum vertex cover problem*** (with R. Gera, S. Horton, C. Rasmussen), *Congr. Numer.* 178 (2006), 161-172.

14. $\mathbf{F}_1\mathbf{F}_2\,\mathbf{F}_3\mathbf{F}_4\,\mathbf{F}_5\mathbf{F}_6\mathbf{F}_8\mathbf{F}_{10}\mathbf{F}_{12}$ **=11!** (with F. Luca), *Portugaliae Mathematica,* Vol. 63, Fasc. 1 (2006), 251-260.

15. ***Almost Hamiltonian Groups*** (with T. Foguel), *Resultate der Mathematik* 48 (2005), no. 1-2, 44-49.

16. ***On a conjecture of Ma*** (with F. Luca), *Resultate der Mathematik* (*Results in Mathematics*) 48 (2005), no. 1-2, 109-123.

17. ***Prime Divisors of Lucas Sequences and a Conjecture of Skalba*** (with F. Luca), *International Journal of Number Theory*, Vol. 1, No. 4 (2005) 583-591.

18. ***Composition with the Euler and the Carmichael function*** (with W. Banks, F. Luca and F. Saidak), *Abhandlungen aus dem Math. Seminar der Universität Hamburg* **75** (2005), 215–243.

19. ***Cholesky factorizations of matrices associated with r-order recurrent sequences,*** *Integers-Electronic Journal of Combinatorial Number Theory,* Vol. 5(2) (2005), #A16. (Also published in Proceedings of a Conf. in Honor of Tom Brown: Topics in Combinatorial Number Theory, published by DIMATIA, Vol. 261, ITI Series.)

20. ***Regular and Strongly Regular Planar Graphs*** (with N.B. Limaye, D.G. Sarvate, P. Young), *Journal of Combinatorial Math. and Combinatorial Computing* **54,** 111-127 (2005).

21. ***Fibonacci numbers that are not sum of two primes powers*** (with F. Luca), *Proceedings of American Mathematical Soc.* **133** (2005), 1887-1890.

22. ***Chaotic Dynamics of Some Rational Maps*** (with C. Georgescu, C. Joita, W. Nowell), *Discrete and Continuous Dynamical Systems* –Ser. A **12: 2** (2005), 363-375.

23. ***Almost Boolean Functions: the Design of Boolean Functions by Spectral Inversion*** (with J.A. Clark, J.L. Jacob, S. Maitra), *Computational Intelligence* **20: 3** (2004), 450-462.

24. ***Asymptotic expansions for some nonlinear recurrences and almost doubly-exponential sequences*** (with E. Ionascu), *Acta Math. Universitatis Comenianae* LXXIII 1 (2004), 1–13.

25. ***Boolean Functions with Five Controllable Cryptographic Properties*** (with S.-H. Sung), *Designs, Codes and Cryptography* **31** (2004), 147-157.

26. ***Generating Functions, Weighted and Non-Weighted Sums for Powers of Second-Order Recurrence Sequences***, *Fibonacci Quarterly* **41** (2003), 321-333.
27. ***Rotation Symmetric Functions - Count and Cryptographic Properties*** (with S. Maitra). In *Proc. R. C. Bose Centenary Symp. on Discrete Math. And Applications*, *Electronic Notes in Discrete Mathematics* **15** (2003), 141-147.
28. p^q **- *Catalan Numbers and Squarefree Binomial Coefficients***, *J. Number Theory* **100/2** (2003), 203 - 216.
29. ***Inequalities related to rearrangements of powers and symmetric polynomials*** (with C. Joita), *J. of Inequalities in Pure and Applied Math.*, **4:2** (2003), art. 37.
30. ***Netted Matrices***, *Intern. J. of Math. & Math Sciences* **2003:39** (2003), 2507-2518.
31. ***Products of Factorials Modulo p*** (with F. Luca), *Colloquium Mathematicum* **96** (2003), 191-205.
32. ***On the prime power factorization of n!*** (with F. Luca), *J. Number Theory* **102/2** (2003), 298-305.
33. ***A Constructive Count of Rotation Symmetric Functions*** (with S. Maitra), *Information Processing Letters* **88/6** (2003), 299-304.
34. ***Nonlinearity, Local and Global Avalanche Characteristics of Balanced Boolean Functions***, *Discrete Mathematics* **248:1-3** (2002), 181-193.
35. ***Powers of Pascal's like triangles and Fibonacci sequences*** (with Rhodes Peele), *Fibonacci Quarterly* **40** (2002), 146-152.
36. ***Inequalities on Linear Functions and Circular Powers***, *J. Inequalities in Pure and Applied Mathematics*, **4:3** (2002), Art. 30.
37. ***There are Infinitely Many Smarandache Derivations, Integrations and Lucky Numbers*** (with Gabriela Stanica), *Smar. Notions Journal* **13** (2002), 48-52 (recreational mathematics).
38. ***Fast Evaluation, Weights and Nonlinearity of Rotation-Symmetric Functions*** (with T.W. Cusick), *Discrete Mathematics* **258**:**1-3** (2002), 289-301.
39. ***Muller-Twist or Comply-Constrain Games*** (with Furman Smith), *Integers-Electronic Journal of Combinatorial Number Theory*, vol. 3 (2002), art. G3.
40. ***Improving the Nonlinearity of Some Balanced Boolean Functions with Good Local and Global Avalanche Characteristics*** (with Soo Hak Sung), *Inform. Proc. Letters* **79** (2001), 167-172.
41. ***Good Lower and Upper Bounds on Binomial Coefficients***, *Journal of Inequalities in Pure and Applied Mathematics* **2:3** (2001), Art. 30.
42. ***Counting the n-chromos of I.J. Schoenberg***, (with T.W. Cusick), *Journal of Combinatorial Theory*, Series A **79** (1997), 298-314.
43. ***Bounds on the number of functions satisfying the strict avalanche criteria***, (with T.W. Cusick), *Inform. Proc. Letters* **60** (1996), 514-519.

4. Publications in refereed conference proceedings

44. ***Aliquots sums of Fibonacci numbers*** (with F. Luca), accepted *Proc. International Conference on Fibonacci Numbers*, 2007.
45. ***Remarks on a sequence of minimal Niven numbers*** (with H. Fredricksen, E.J. Ionascu, F. Luca)*,* S.W. Golomb et al. (Eds.): SEQUENCES 2007, Springer-Verlag LNCS 4893, 162–168, 2007.
46. ***Graph eigenvalues and Walsh spectrum of Boolean functions***, Proceedings of the 'Integers Conference 2005' in Celebration of the 70th Birthday of Ronald Graham, (Carrollton, Georgia), Walter de Gruyter, 431-442, 2007.

47. ***Fibonacci numbers of the form $p^a \pm p^b$*** (with F. Luca), accepted in *Proceedings of the International Conference on Fibonacci Numbers* (2005), Kluwer.
48. ***Results on Rotation-Symmetric Bent & Correlation-Immune Boolean Functions*** (with J. Clark, S. Maitra), Lecture Notes in Computer Science, *Proceedings of FSE* 2004, Delhi, India; LNCS 3017 (R. Bimal, W. Meier, Eds.) 2004, XI, 485.
49. ***Cullen Numbers in Second Order Recurrent Sequences***, *Proceedings of the International Conference on Fibonacci Numbers* (2004), Kluwer, 167-175.
50. ***Almost Boolean Functions: the Design of Boolean Functions by Spectral Inversion*** (with J.A. Clark & J.L. Jacob (York Univ.-UK), S. Maitra (Indian Stat. Inst.)), *Proceedings of* **IEEE** Conference on Evolutionary Computation 2003. Special Session on Evolutionary Computation and Computer Security. *Congress of Evolutionary Computation,* Canberra, Australia, December 2003.
51. ***New bounds on the number of functions satisfying the strict avalanche criteria***, (with A.M. Youssef, T.W. Cusick, S.E. Tavares), *Selected Areas of Cryptology*, Queen's University, Kingston, Canada, pp. 49-56, 1996.

5. Work submitted or in progress

52. ***Cryptographic Boolean Functions*** (with T.W. Cusick), book draft, 2007.
53. ***Sums of the Thue-Morse sequence over arithmetic progressions*** (with T.W. Cusick), progress 2008.
54. ***General Theory on Sums of Products of Binary Sequences*** (with E. Kilic), progress 2008.
55. ***On multiples with the same digit sum*** (with F. Luca), progress 2008.
56. ***On a conjecture of balanced symmetric Boolean functions*** (with T.W. Cusick, Yuan Li), progress 2008.
57. ***Factorizations and Representations of Second Order Linear Recurrences with Indices in Arithmetic Progressions*** (with E. Kilic), progress 2008.
58. ***Factorizations and representations of polynomials binary recurrences by matrix methods***, (with E. Kilic), progress 2008.
59. ***On the nonexistence of bent rotation symmetric Boolean functions***, submitted.
60. ***On Machin's formula with powers of the golden section*** (with F. Luca), submitted.
61. ***Amicable Fibonacci numbers*** (with F. Luca), submitted.

6. Presentations at Conferences – National and International

1. ***Nagy graphs and homogeneous bent Boolean functions***, Integers conference, West Gergia, 2007.
2. ***Remarks on homogeneous bent Boolean functions***, Advanced Study Institute, Moscow, September 2007.
3. ***Counting balanced polynomials over finite fields*** (invited talk), AMS Sectional Meeting, Hoboken N.J., April 2007.
4. ***Aliquot Sums of Fibonacci Numbers***, 12th *International Conference on Fibonacci Numbers, San Francisco, CA,* July 2006.
5. ***Avalanche Features and Walsh Spectrum of Boolean Cayley Graph***, *INTEGERS 2005 Conference in honor of R. Graham*, Univ. of West Georgia, October 2005.
6. ***Prime Divisors in Lucas Sequences*** at *Southeast Regional Meeting on Numbers* at Univ. of South Carolina, Columbia, SC, April 2005.
7. ***Group theory based public-key cryptography***, *Zassenhaus Group Theory* conference, Auburn University Montgomery, March 2005.

8. ***Counting Rotation Symmetric Functions***, *West Coast Number Theory Conf.*, Univ. of Nevada – Las Vegas, Dec. 2004

9. ***Fibonacci Numbers of the form $p^a \pm p^b$***, *11th International Conference on Fibonacci Numbers* (Braunschweig, Germany), July 2004.

10. ***To encrypt or not to encrypt, that is the question*** (invited lecture), IMATE-UNAM, June 2004.

11. ***Cubic Sieve Congruence Problem and Discrete Logs***, *West Coast Number Theory Conference*, Asilomar-CA, December 2003.

12. ***Graph Eigenvalues and Walsh Spectrum of Boolean Functions***, *Midwest Conference on Combinatorics, Cryptography and Computing*, U. of Nevada-Las Vegas, November 2003.

13. ***Cholesky factorizations of matrices associated to r-order recurrent sequences***, *INTEGERS 2003 Conference in honor of T. Brown*, Univ. of West Georgia, October-November 2003.

14. ***Exponents in the Factorization of n!,*** *Southeast Regional Meeting on Numbers*, Univ. of North Carolina, March 2003.

15. ***Circulant Matrices, Trinomials and Diophantine Equations,*** *West Coast Number Theory Conference*, San Francisco – CA, December 2002.

16. ***Cullen Numbers in Binary Sequences***, *International Conference on Fibonacci Numbers*, Arizona, June 2002.

17. ***Squarefree Catalan Numbers and Residues of Products of Factorials in Z_p*** - *Notions in Number Theory* (Invited Colloquium Talk), University of South Alabama, Mobile, March 25, 2002.

18. ***If Everything Else Fails, Generalize!,*** Invited Talk at Mathematics Circle at USA, Mobile, March 25, 2002.

19. ***Netted Matrices and Fibonacci Sequences,*** *West Coast Number Theory Conference*, Asilomar, December 2001.

20. ***Trade-off in the Design of Boolean Functions***, *15th Midwest Conference on Combinatorics, Cryptography and Comput.*, U. of Nevada-Las Vegas, October 2001.

21. ***Bounds on Binomial Coefficients with Indices Having a Common Factor***, *Southeast Regional Meeting on Numbers* (SERMON), Furman University, SC, March 2001.

22. ***Catalan Numbers and Squarefree Binomial Coefficients*** (Special Session), Joint AMS-MAA, January 2001, New Orleans.

23. ***Chromos and Covering Residues Classes*** (Special Session), *Southeast Regional Meeting of AMS*, U. of Alabama-Birmingham, November 2000.

24. ***Atlas of Boolean Functions with Good Cryptographic Properties***, *Midwest Combinatorics, Cryptography and Computing Conference*, Wichita State University, October 2000.

25. ***Congruences Modulo s of s-Catalan Numbers,*** *Southeast Regional Meeting on Numbers* (SERMON 2000), April 2000, Blacksburg, VA, USA.

26. ***Powers of a Certain Matrix and Fibonacci Sequences*** (with Rhodes Peele), presented by R. Peele at Sermon 2000, Blacksburg, VA.

27. ***Mathematics and Cryptography: Beware of the ATM***, MAMS, November 1999 (invited by R. Underwood), Montgomery, AL, USA.

28. ***G-nonlinearity and bent functions***, *Fourth International Conference on Finite Fields and Applications*, Waterloo, Ontario, Canada, August 12-15, 1997.

29. ***Quadratic functions in Galois fields of characteristic 2***, *International Conference on Combinatorics, Information Theory and Statistics*, Maine, Portland, July 1997 (invited by H.F. (Skip) Mattson, Jr.).

30. ***Bent functions and a new definition of nonlinearity***, *MGO Conference*, Syracuse University, New York, April 1997.

31. ***Distribution of prime numbers-density results***, Institute of Mathematics of Romanian Academy, Bucharest, Romania, summer 1996.

32. ***New bounds on the number of functions satisfying the strict avalanche criterion***, A. M. Youssef, T. W. Cusick, P. Stanica, and S. E. Tavares, Advances in Crypto '96 Rump Session Presentations on Boolean Functions, August 1996.
33. ***Cohomology of finite groups***, Institute of Mathematics of Romanian Academy, Bucharest, Romania, summer 1996.
34. ***Cryptosystems and attacks on them***, State University of New York at Buffalo, 1996.
35. ***Infinite Galois Theory***, Institute of Mathematics of Romanian Academy, Bucharest, Romania, summer 1996.
36. *I presided a session on Calculus at the Mathematical Association of America* meeting held at Huntingdon College, Montgomery - AL, March 2001.
37. *I participated at The International Conference on Number Theory in honor of Heini Halberstam* at University of Illinois, Urbana-Champagne, 1995.

7. Journal Referee Services

I have reviewed papers as a referee for the following journals and conference proceedings: *Finite Fields and Applications, Discrete Mathematics Journal, Journal of Number Theory, Ars Combinatoria, ICALP 2005 (Spain), Applied Mathematics Letters, Information Processing Letters, Electronic Letters, Integers-Combinatorial Number Theory Journal, Journal of Zhejiang University SCIENCE (JZUS), Journal of Indian Statistical Association, Revista Colombiana de Matematicás, Indocrypt: International Conference on Cryptography* 2003, 2005 (Program Committee), *Proceedings of a Conference in Honor of Prof. J. Seberry* (2004), *International Conference on Computers and Communications*, Romania, 2004, 2005, 2006, etc.

8. Computer Skills

- System Administration (servers running Solaris, RedHat Linux, approx. 70 computers running MS Windows 95/98/2000/Me/XP).
- Proficient in programming using Mathematica, Maple, Matlab; used C/C++, Fortran, Basic, Pascal, Python; advanced user of TeX, LaTeX, Microsoft Office, Netscape Navigator, Emacs, etc.; competent in operating applications under Unix/Linux, MS Windows 3.1, Windows 95/98/2000/Me/XP.

9. Grants, Honors and Awards, Memberships

- **NSF multi-year proposal** (submitted with T.W. Cusick), 2007.
- **NATO Award:** all expenses to attend and give an invited talk ``Counting balanced Boolean functions of bounded degree'' at the NATO Advanced Study Institute ``Boolean Functions in Cryptology and Information Security'' held at Zvenigorod (near Moscow), September 8-18, 2007.
- **Invited** to spend the summer of 2008 in the Mathematics Department of TOBB University of Economics and Technology, Turkey.
- **Co-editor** of Proceedings of the International Conference on Fibonacci Numbers, Patras, Greece, Summer 2008.
- **Research Initiation Program grant** NPS (2006-2008); Project: *Cryptographic Boolean Functions*
- **Distinguished Research Professor** at AUM (2004-2007)
- **Associate Editor** of the *Australian J. Mathematical Analysis and Applications* (2003-2006)
- AUM **Chancellor's grant** (2005)

- AUM **Research Grant-in-Aid**; Project: *Cryptographic Functions Satisfying Important Design Criteria: Local and Global Avalanche Characteristics, Nonlinearity*, received 2000.
- **Full Scholarship** during graduate studies, 1993-1998.
- Earned a full five-year **undergrad. scholarship** from the Univ. Bucharest (1986-1992).
- Awarded an additional **research grant** from the Romanian Ministry of Education during undergraduate studies (1990-1992).
- **Member of the Scientific Committee** of *International Conference on Computers and Communications,* Baile Felix – Oradea, Romania, May 27-29, 2004
- **Program Chair** for the International Conference on Cryptography - Indocrypt 2003, India
- **Research Award**, School of Sciences - Auburn Univ. Montgomery, 2002-2003.
- **Dean's Award***,* School of Sciences - Auburn Univ. Montgomery, 2002-2003.
- **Junior Faculty Award**, School of Sciences - Auburn Univ. Montgomery, 2001-2002.
- Elected as **AFTICA (Associate Fellow)** in the Institute of Combinatorics and Its Applications - Canada, 2001
- Member of *Research Group on Inequalities and their Applications*, Victoria University – Australia, *American Mathematical Society* (since 1993), *Romanian Association of Mathematicians* (since 1992), *Mathematical Association of America* (since 1999), *Fibonacci Association* (since 2001), *Mensa International* (since 1990), *Phi Kappa Phi* (since 2001), Cited in *Who's Who in Combinatorics*, 2000, *Who's Who in Mathematical Sciences* (1997), *Who's Who Among Students in American Univ. and Colleges* (Fall 1996)

10. Graduate Students

- Carlos Fernandez, Master's, June 2007
- Spyros Pollatos, Ph.D. student, 2007-

11. University/School/Department Service

- Applied Math *Chair Search Committee* member, 2007.
- Managing (with R. Gera, C. Rasmussen) Finite Mathematics for Operations Research (1025), Bridge to Advanced Mathematics (2025) and Discrete Mathematics (3025) courses.
- Wrote a set of lecture notes for a number theory course (2005)
- Designed a graduate course on *Combinatorial and Cryptographic Properties of Boolean Functions* (Fall 2007)
- *PhD Committee* member (since 2006), Applied Mathematics, NPS.
- Served on *Math Department Faculty Search Committee,* 2003-2004 and 2004-2005.
- Served on the *Head of Math Department Search Committee.*
- *Faculty advisor* for the AUM Math Club, 2003-present.
- Member of *AUM Grievance Committee*, 2003-present.
- Chair of the *Tenure and Promotion Committee* for a faculty member, 2003.
- Serve on AUM's *Information Technology Assessment Committee,* 2002-present.
- Serve on *Mathematics Program Assessment, Freshman Mathematics Program Assessment,* and *Communications Committee.*
- *Co-Director for the Sciences Computer Center*, 2001-2003.
- Served on the *Computer Overview Committee* formed by the Dean of the School of Sciences, winter 2000 - spring 2001

12. Courses Taught (ug=undergraduate, g=graduate)

- *Advanced Combinatorics* (g)
- *Discrete Mathematics* (g, ug)
- *Abstract Algebra* (g,ug)
- *Number Theory* (g, ug)
- *Linear Algebra* (g, ug)
- *Bridge to Advanced Mathematics* (g)
- *Finite Mathematics for Operations Research* (g)
- *Finite Mathematics* (ug)
- *Precalculus Algebra and Trigonometry* (ug)
- *Business Calculus* (ug)
- *Single Variable Calculus I* (ug)
- *Single Variable Calculus II* (ug)
- *Multivariable Calculus III* (ug)
- *Ordinary Differential Equations* (ug)

13. REFERENCES:

- Prof. Thomas W. Cusick, State University of New York at Buffalo, cusick@acsu.buffalo.edu
- Prof. James L. Kays, Dean of Graduate School of Engineering and Applied Sciences, Naval Postgraduate School, jlkays@nps.edu
- Prof. Hal Fredricksen, Applied Mathematics Department, NPS, half@nps.edu
- Prof. Clyde Scandrett, Chair, Applied Mathematics Department, NPS, cscand@nps.edu
- Prof. Dinesh Sarvate, College of Charleston, sarvated@cofc.edu
- Dr. Subhamoy Maitra, Indian Statistical Institute, subho@isical.ac.in
- Dr. Florian Luca, Senior Researcher, Universidad Nacional Autónoma de México, fluca@matmor.unam.mx

14. Citizenship

Romanian citizen, US permanent resident